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EXAMINER	
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/054,376	Applicant(s) JOHNSON ET AL.	
	Examiner William J. Klimowicz	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,11-18,23-26,28,32-38,42-46 and 49-55* is/are rejected.

7)☒ Claim(s) *7-10,19-22,27,29-31,39-41,47,48 and 56* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 January 2002* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

Claims 11, 19, 23, 39 and 47 are objected to because of the following informalities and appropriate correction is required.

The following phrase(s) lack clear antecedent basis within the claim(s), i.e., either the particularly recited passage fails to be properly introduced prior to its appearance at that point in the claim or the structure recited in the passage is not an inherent part of or component of the previously recited structure. The lack of antecedence as noted *infra*, is merely formal, since the claims can be understood in light of the instant specification and drawings and provide no inconsistencies with the previously recited claim language; the antecedence informalities delineated below do not rise to the level of a rejection under 35 USC 112 2nd paragraph:

(i) Claim 11 (line 2), line 2, "said base."

(ii) Claim 23 (line 3), "the housing."

With regard to claim 19 (line 5), claim 39 (line 5) and claim 47 (line 5-6), The phrase "actuator arm assembly latch" should be changed to the phrase --actuator arm latch assembly-- in order to remain consistent with preceding claim language.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 42 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following phrase(s) lack clear antecedent basis within the claim(s), i.e., either the particularly recited passage fails to be properly introduced prior to its appearance at that point in the claim or the structure recited in the passage is not an inherent part of or component of the previously recited structure; the following antecedent basis ambiguities lead to inconsistencies with preceding claim language and thus rendering the claim ambiguous:

(i) Claim 42 (lines 1-2) "said third cup" and "said first cup."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 11-17, 23-26, 28, 32-37, 43-45 and 49-55 are rejected under 35 U.S.C. 102(e) as being anticipated by Misso (US 6,088,193).

As per claims 1, 23, 43 and 49, Misso (US 6,088,193) discloses a disk drive (100), comprising: a housing (102, 104); at least one data storage disk (108) movably interconnected with said housing (102, 104); an actuator arm assembly (112) movably interconnected with said housing (102, 104) by an actuator arm pivot (114); an actuator arm drive assembly (124)

interconnected with said actuator arm assembly (112); a transducer (120) interconnected with said actuator arm assembly (112) and disposable in alignment with said at least one data storage disk (108) by said actuator arm drive assembly (124); and an actuator arm latch assembly (138) comprising a latch pivot (172) and a first latch member (160) movably mounted on said latch pivot (172), wherein said latch pivot (172) is disposed in non-parallel relation to said actuator arm pivot (114) (*cf.*, FIGS. 1-5).

As per claim 2, wherein said housing (102, 104) comprises a base plate (102).

As per claim 3, wherein said actuator arm assembly (112) is a rotary actuator arm assembly (FIG. 1).

As per claim 4, wherein said transducer (120) is a read/write transducer - COL. 3, line 61.

As per claims 5 and 23, wherein said housing (102, 104) comprises a base plate (102), wherein said first latch member (160) comprises a latch (which includes latch end (164) which secures the latch at its latching and unlatching positions), wherein said first latch member (160) is movable between non-latching (e.g., FIG. 5) and latching positions (e.g., FIG. 4) about said latch pivot (172), and wherein said latch (e.g., 164) is disposed further from said base plate (102 - note that lower plate (129) resides on (102)) when said first latch member (160) is in said latching position (FIG. 4) versus said non-latching position (FIG. 5).

As per claims 6, 26 and 43, wherein said first latch member (160) comprises a first cup (164 - see FIG. 2, wherein member (164) is shaped like a drinking cup with a hole (170) provided therein) and a latch (e.g., either of (178 or 174)), wherein said actuator arm latch assembly (138) further comprises a first inertial mass (176) that is at least partially disposed within said first cup (164).

As per claims 11, 32 and 49, wherein said at least one data storage disk (108) is movably interconnected with said base (102) within a first reference plane, wherein a second reference plane is perpendicular to said first reference plane, and wherein said actuator arm latch assembly (138) comprises means (e.g., including groove (174) and pin (140)) for latching said actuator arm assembly (112) both when said disk drive (100) is exposed to a force having at least a primary component that is within said first reference plane and when said disk drive (100) is exposed to a force having a primary component that is within said second reference plane. This occurs since a force in a direction parallel to the base plate (102) causes pin (140) to engage surface (190) of the latch assembly to latch the actuator assembly (112) and when a force is applied perpendicularly thereto, pin (140) essentially remains stationary (at the position of FIGS. 4 or 5, while the latch groove (174) moves due to a vertical force, e.g., a vertical force that pushes down on cover (upper plate (129)) and causes the latch to move upward - see FIG. 5 (via Newton's laws of inertial physics), "temporarily" releasing pin (140) from latch groove (174), and when the force terminates the latch again moves to a position of FIG. 4, whereby the groove (174) engages pin (140) to thereby again "latch" the pin.

As per claims 12 and 33, wherein said housing (102 104) comprises a base plate (102), and wherein said actuator arm latch assembly (138) comprises means (e.g., including groove (174) and pin (140)) for latching said actuator arm assembly (138) when said disk drive (100) is exposed to a force having a primary component that is at least generally parallel with said base plate (102), as well as when said disk drive (100) its exposed to a force having a primary component that is at least generally perpendicular to said base plate (102) - see the discussion of claim 11, *supra*.

As per claims 13 and 34,wherein said actuator arm latch assembly (138) comprises means for latching (e.g., including groove (174) and pin (140)) said actuator arm assembly (112) when said disk drive (100) is exposed to a force selected from the group consisting of a linear force, a rotational force, and any combination thereof (e.g., see FIGS. 4 and 5).

As per claim 14, wherein a primary axis of said latch pivot (172) is disposed within a first reference plane (e.g. plane of base (102)) that is at least generally perpendicular to a second reference plane (e.g., plane in which pivot (114) resides) that contains a primary axis of said actuator arm pivot (114) (e.g., cf. FIGS. 1-5).

As per claims 15 and 35, wherein said actuator arm latch assembly (138) comprises means for biasing said first latch member to a non-latching position (FIG. 5 - see also COL. 6, lines 16-18).

As per claims 16, 36 and 44, wherein said actuator arm latch assembly (138) comprises a second latch member (142/152) fixedly mounted to said housing (102, 104), whereby said second latch member (142/152) does not move relative to said housing (102, 104).

As per claims 17, 37 and 45, wherein said latch pivot (172) is integrally formed with said second latch member (142/152).

As per claim 24, wherein said latch pivot (172) is disposed in non-parallel relation to said actuator arm pivot (114).

As per claim 25, wherein a primary axis of said latch pivot (172) is disposed within a first reference plane (parallel to base (102)) that is at least generally perpendicular to a second reference plane (plane in which pivot (114) resides) that contains a primary axis of said actuator arm pivot (114).

As per claim 28, wherein said first cup comprises a planar base and an annular sidewall (see FIGS. 4, 5 and 2).

Additionally, as per claim 50, the disk drive structure of Misso (US 6,088,193) allows for reducing potential contact between the head (120) and the data storage disk (108), whereby the structure of Misso (US 6,088,193) allows for and accomplishes the following steps: parking said head (120) is accomplished in landing zone (130) of disk (108); exposing said disk drive (100) to a first force having at least a primary component that is at least generally parallel to said data storage disk (108) (e.g., parallel to the disk surface (108)), wherein said exposing said disk drive (100) to a first force step is executed after said parking step (in FIG. 4, for instance); executing a first precluding step comprising precluding said head (120) from moving across said data storage disk (108) as a result of said exposing said disk drive (100) to a first force step (force generated parallel to the base plate (102)); exposing said disk drive (100) to a second force having at least a primary component that is at least generally perpendicular to said data storage disk (108) (e.g., a force pushing vertically down on the top surface of cover (104) and hence upper plate (129) as seen in FIG. 5, which causes the latch assembly to move upward according to Newton's laws of inertial physics), wherein said exposing said disk drive (100) to a second force step is executed after said parking step (after FIG. 4); and executing a second precluding step comprising precluding said head (120) from moving across said data storage disk (108) as a result of said exposing said disk drive to a second force step. As discussed with regard to claim 11, above, this occurs since a force in a direction parallel to the base causes pin (140) to engage surface (190) of the latch assembly to latch the actuator assembly (112) and when a force is applied perpendicular thereto, pin (140) essentially remains stationary (at the position of FIGS. 4 or 5), while the latch

groove (174) moves due to a vertical force, e.g., a vertical force that pushes down on cover (upper plate (129)) and causes the latch to move upward - see FIG. 5, "temporarily" releasing pin (140) from latch groove (174), and when the force terminates the latch again moves to a position of FIG. 4, whereby the groove (174) engages pin (140) to thereby again "latch" the pin.

As per claim 51, wherein said parking step comprises disposing said head (120) beyond a perimeter of said data storage disk (108) (e.g., as broadly interpreted, an "internal" perimeter encompassed by landing zone (130)).

As per claim 52, wherein said parking step comprises disposing said head on said data storage disk (108 - at said landing zone (130)).

As per claim 53, wherein said executing first and second precluding steps each comprise moving a latch (160) at least generally in an upward direction (FIGS. 4 and 5, such "moving" which can occur multiple times).

As per claim 54, wherein said executing first and second precluding steps each comprise pivoting a latch (160) about a first reference axis (172) that is disposed in non-parallel relation to a data storage surface of said data storage disk (108).

As per claim 55, wherein said data storage disk (108) rotates about a first reference axis (106), wherein said executing first and second precluding steps each comprise pivoting a latch (160) about a second reference axis (172), and wherein said first and second reference axes (106, 172) are contained within first and second reference planes that are disposed in at least generally perpendicular relation (*cf.*, FIGS. 1-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 18, 38 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misso (US 6,088,193).

See the description of Misso (US 6,088,193), *supra*.

With regard to claims 18, 38 and 46, although Misso (US 6,088,193) remain silent with respect to the composition of the first and second latch member as being plastic, Official notice is taken that plastic latch members used in disk drives are notoriously old and well known and ubiquitous in the art; such Officially noticed fact being capable of instant and unquestionable demonstration as being well-known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the latch members of Misso (US 6,088,193) as being conventional plastic.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the latch members of Misso (US 6,088,193) as being conventional plastic in order to provide a latch assembly that can be easily manufactured in an inexpensive manner, while providing a durable and lightweight non-magnetic material for support, as is known in the art.

Allowable Subject Matter

Claims 7-10, 19-22, 27, 29-31, 39-41, 47, 48 and 56 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 42 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (703) 305-3452. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

William J. Klimowicz
Primary Examiner
Art Unit 2652

WJK

October 6, 2003